4 February 1957

MEMORANDUM FOR: THE RECORD

SUBJECT : Visit to [redacted] 25X1

1. TIME AND PLACE OF MEETING: The meeting was held 18 January 1957 at [redacted] 25X1

2. ATTENDANCE: [redacted] 25X1

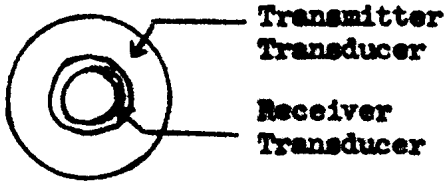
3. PURPOSE OF MEETING: To discuss the progress of the projects at [redacted] 25X1

4. DISCUSSION:

a. Ad Hoc #25 - Wall Measurement Program

[redacted] has received and signed the contract initiating this project. The man who will devote his full time to this project has not received his clearance as of yet, but preliminary design work has started. [redacted] stated that they needed to buy a Textronic scope which would be part of the final equipment. They will modify the scope and use its high voltage source. 25X1 25X1

Under the present setup [redacted] is using two barium titanite transducers. One is used to transmit and one to receive. The two transducers are now set side by side, but [redacted] is constructing a stacked head holder. The holder is of the following design 25X1 25X1



Glycerin is used as the damping agent inside the crystal holders. The case of the holder is made of brass. Glycerin is also used as the bonding agent between the contact surface of the transducer and the wall under measurement. [redacted] is using three inch barium titanite transducers and preliminary checks indicate that they will work nicely. 25X1

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Using the two transducers side by side, [redacted] has conducted spot checks on 3", 6" and 12" cement blocks. 200 KC was used as the frequency. A fair degree of accuracy was obtained. In a test run on a three inch cement block, an 800 volt pulse from the thyratron tube was fed in. A 10 milivolt reflective signal was received. The interval on the scope between the initial pulse and the first reflective wave was 14 centimeters. [redacted] has determined that on an average cement block, the signal travels 2 cm/micro second. Thus the block under measurement was 7 cm. or 2.76" thick. This gives a 92% degree of accuracy. [redacted] feels that for this frequency (200 KC) this will be as accurate as they will be able to get. It is estimated that the large transducers will be workable at 100 KC also. [redacted] invisions using very small transducers or probes at higher frequencies for close final measurements. 25X1 25X1 25X1 25X1

Readable signals in blocks up to 12 inches have been obtained with [redacted] preliminary setup. 25X1

b. P-109B - Contact Microphone

[redacted] has conducted a number of wall tests using the Shure 61B, the Brush BL301 and the experimental microphone built by [redacted] Quiet walls were tested first, then walls with what might be called an average noise level for walls with no air conditioning units or elevators. The ambient background noise for both walls was low, in that the walls were located at [redacted] and the usual noise of a city street was absent. All of the walls tested were of solid concrete, 6 inches thick. The speaker was set six feet from the wall and directed towards the wall. [redacted] for a noise source, uses a recorded tape with the noise level, as measured 12 inches from the speaker, set at a specified level; i.e., 50, 60, or 70 db. This gives a good standard, but is somewhat artificial in respect to noisy room conditions. In normal situations, in a room of high ambient noise level, the average speaker raises his voice to compensate for the background noise and thus the readings [redacted] gets, would be for a noisy room, lower than normal. However, this is to our advantage. 25X1 25X1 25X1 25X1 25X1

Tapes of the quiet walls were good, even at a 50 db level. Tapes of the noisier walls indicated that anything below 60 db is lost in the noise. [redacted] uses various filters cutting off 350, 500, and 750 cps. [redacted] estimates, that in conditions where the ambient background due to traffic, etc., is between 50-60 db, a noise level source of 70 db would probably not be intelligible. [redacted] claims that a score of 50% on the word tests they are using is equivalent to a 90% score if sentences are used. This appears to me to be somewhat optimistic. 25X1 25X1 25X1

[redacted] stated that their experimental microphone, used with a high impedance load, could be used with a hearing aid amplifier, if the amplifier had enough gain. This, of course, applies to the [redacted] microphone too; and it appears that both [redacted] have produced a 25X1 25X1 25X1

microphone with equal

microphone with equal intensity and somewhat similar frequency characteristics. The basic difference is that the [redacted] one, due to different loading, has a wider frequency response. 25X1

[redacted] was able to purchase the commercial microphones (Shure & Brush) for $37.50 each. The main difference between the two units appears to be limited to the exterior case. 25X1

During the next phase, [redacted] will continue wall tests on noisy walls and study the (1) benefits of binaural, if any, (2) mounting effect, whether tip or flush mounting is best [redacted] claims flush mounting is best), (3) microphone placement, where on the wall would be the best place to put the microphone, the effects of studs, corners, etc., and the point in a room giving the best sterephenic effect, if it is possible to determine such a point. 25X1 25X1

[redacted] was instructed to give some thought to how the microphones could be mounted on a wall quickly, easily, and without damaging the paint or paper of a wall. It should be interesting to see what approach [redacted] will take in solving this problem. 25X1 25X1

[redacted] 25X1

TSS/APD

Distribution:
Orig. - P-109B
1 - AH-25
1 - AWS
1 - Chrono

AWS:ls

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